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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,909

05/01/2006

Hiroyuki Hirano

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EXAMINER

PIPALA, EDWARD J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

05/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,909	Applicant(s) HIRANO ET AL.	
	Examiner EDWARD PIPALA	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/1/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to the application filed by Hirano et al., on 5/1/06 for the application titled "Failure Sensing Device of Vehicle Control System".

Claims 1-18 are presently pending.

Information Disclosure Statement

2. Applicant's IDS filed on 5/1/06, 11/14/07 and 11/30/07 have been considered by the Examiner as indicated by the accompanying initialed copies of Applicant's form PTO-1499 (3 pages). The published US applications on the IDS of 5/1/06 were lined through because the document numbers were incorrect (each missing a leading zero), however these are correctly cited by the Examiner on the accompanying PTO-892.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loehr et al. (US Pub. 2003/0023407 A1) in view of Toshifumi et al. (Japanese Pub. JP7329701).

With respect to independent claims 1, 9, 10 and 18, Loehr et al. discloses monitoring the functioning of a system by checking input signals, output signals and at least one function unit of the system, where the system includes at least one lower level

sub-system and/or is a component of a higher level system. The abstract goes on to indicate that the system of Loehr et al. includes components in the form of hardware, including sensors, actuators and/or function computers, so as to permit easier unambiguous allocation of any faults in the system to the various function units and that an intended function of the system is subdivided hierarchically as a function of the complexity of the function throughout multiple monitoring layers (greater and lesser control/processing loads). However, Loehr et al. does not necessarily disclose manipulating a corresponding actuator and determining or sensing a failure in a processing unit based on a control target value and information based on the control target along with a response associated therewith.

Toshifumi et al. (JP7329701) discloses a simplified reliability control system based on carrying out mutual communication between vehicle control devices that transmit and receive signals from/to each other, where at the end of the abstract it is taught that a computation command part (63) carries out a computation with a prescribed computation formula by giving a prescribed figure to the sub-computation part (61), and a control breakage (fault, error or failure) judgment part (64) determined the breakage (fault, error or failure) based on the computation results.

Accordingly, it would have been obvious to one of ordinary skill in the art of vehicular control systems to implement the error/fault detection system of JP7329701 within the context of the hierarchical control system of Loehr et al., so as to determine a failure in a control subsystem by determining if appropriate values are calculated for particular input values used in controller applications.

With respect to claims 2 and 11, relating to determining if a calculation formula has been properly processed, please see JP7329701 as noted above.

With respect to claims 3, 5, 12 and 14, relating to diagnosing a failure or interruption in the diagnosing system or control, please see Loehr et al. which teaches that the lower-level and higher-level systems function by checking input signal, output signals and at least one function of the system.

With respect to claims 4 and 13, relating to a multiplexed configuration of the calculating units, to which the Examiner takes Official Notice in that the use of multiplexing in microprocessor based systems is notoriously old in the art.

With respect to claims 6-8 and 15-17, relating to a plurality of control units, assigning priorities to failure sensing and performing failure sensing with higher priority on processing units with smaller processing duties (control loads) , please note that Loehr et al., specifically teaches a hierarchal monitoring system with higher and lower level subsystems which perform distributed fault processing to "permit easier unambiguous allocation of any faults occurring in the system to the various function units of the system" (from the abstract of Loehr et al).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PIPALA whose telephone number is (571)272-1360. The examiner can normally be reached on M-S 9:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward Pipala/
Examiner, Art Unit 3663